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The Threat of WMD: Will We Hold It at Risk, Or Be Held at Risk by It?

By

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations (JMO).

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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The Threat of WMD: Will We Hold It at Risk, Or Be Held at Risk by It?

American interests require the US military to maintain a power projection capability to defend those interests. The threat of WMD *can* effectively hold the US at risk - vice the US holding such threatening actors at risk. The threats such weapons impose on US national interest, American citizens, and to US allies require more than *reliance on deterrence* and US non-proliferation (NP) efforts. *More active* options, such as a *preemptive strike capability*, offer a *greater deterrent threat than the threat of retaliation*. *This capability is required* in our Counter-Proliferation (CP) efforts, and should be utilized to reduce the threat to American forces, in the event deterrence fails.

Our operational commanders must have the capability to *deny* the adversary an ability to hold us at risk with WMD. We must *develop*, the necessary *tools* (to conduct preemptive strike options) and *refine* and *exercise* these capabilities and procedures. Doing so, will build our *national resolve and confidence*, in adding a preemptive tool *to our counter-proliferation toolbox* against the threat of WMD utilization against our forces. Without the requisite tools, *we will limit our options* to response only. We will effectively take away our capability to deny our adversary his *stockpile and production of WMD*. Denial is such a critical opportunity that must be exploited, *prior* to calling upon our military forces to prosecute national goals in the face of the WMD risks.

Without the capability to preempt an adversary's threatened use of WMD, *we will remain at risk, vice holding his threat at risk*. In order to counter this threat, these shortfalls must be fixed. If we do not actively seek to *deny* our adversary his WMD threat, we will be locked into facing the threat of *deploying, operating, and fighting* in contaminated environments.

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Introduction.

November 16, 1990, President George Bush enacted the International Emergency Economic Powers Act, the National Emergencies Act, and section 301 of title 3 of the United States Code, (Executive Order 12735) declaring that proliferation of chemical and biological weapons constituted an unusual and extraordinary threat to the national security and foreign policy of the United States and thereby declared a national emergency to deal with that threat.¹ One month later, we were rapidly preparing to counter the potential use of WMD against American forces.

The United States will not tolerate the use of chemical or biological weapons... The American people would demand the strongest possible response. You and your country will pay a terrible price if you order unconscionable acts of this sort.²

This quote from President Bush (to Saddam Hussein) during the Gulf War highlights a critical U.S. vulnerability—*our reliance on deterrence against Weapons of Mass Destruction (WMD)*.

In order to restrain Saddam's potential use of WMD, President Bush threatened retaliation in response to WMD utilization. However, with the U.S. already devoid of chemical or biological weapons (see note 1), *how likely* was a response utilizing nuclear weapons against Iraq?³

Furthermore, *how credible* will such a threat be against others in the future? In preparing capabilities for options should *deterrence fail*, our current Counter Proliferation (CP) shortfalls may well exacerbate our subsequent *vulnerability* to the threat of WMD. Without preparations to preemptively counter WMD, the U S is left with only a threat of retaliation for deterrence, and response to attack, if deterrence fails. Strategically, does reliance on deterrence and preparations for defense, make sense? *Operationally*, how does a commander justify the losses, WMD would incur, to this nation, with should deterrence fail? *Tactically*, should we not seek out and destroy the enemy's capacity to wage war *before* facing the enemy's threat?

Americans are unwilling to accept mass U.S. casualties in military operations, and today's world is intolerant of needless mass civilian casualties during U.S. military operations. When these two considerations combine with the current U.S. policy of deterring and defending against WMD proliferation, we have the recipe for disaster. In order to *deter* attack, we must present a credible threat of retaliation or response to a hostile act. In order to *defend*, we will exhaust innumerable efforts to protect our armed forces against a tremendous threat posed by ballistic missiles and other various delivery methods of WMD agents, or effects from chemical, biological, or nuclear weapons. The sheer size and weight of these tasks argues for a more direct method – *preemption* (or disarmament of the WMD threat) *by striking the production, storage, or weaponization facilities*. The case for strategic preemption has been argued before (see note 2)⁴ and makes better strategic, operational and tactical sense than deterrence and defensive preparations, should deterrence fail. Nonetheless, *this paper deals with* the current counter-force and counterproliferation (CP) *shortfalls that may impede or preclude* the development of *that* critical military option. Due to the *political* consequences of deciding to strike WMD facilities and the *potential for collateral effects*, U.S. decision-makers *may* opt for defensive measures when preemptive measures *should* be called for. Decision-makers and military operational commanders must have confidence in our preemptive counter-force capabilities *before* they can *adequately weigh the risks versus potential consequences* of such decisions.

It is my thesis that by developing the necessary *planning tools and weapons, and by exercising their capabilities*, we will be able to foster the necessary *confidence (or resolve)* our national leadership will require, in order to add *preemptive strike* to our CP toolbox. Without this “tool”, we will be left with only deterrence and defense as options. Fear of the consequences, will

make us impotent to preemptively remove a WMD armed actor's production, storage, or weaponization capabilities. A review of our current capabilities, past practices, and current initiatives will point to the fact that WMD targets are unique and different target sets that require specific advances to effectively counter.

The Growing value of a WMD threat.

The threat *will* come, as Col. Reubein suggests, from "the most likely candidates the U.S. may become militarily engaged with, and whose possession of WMD is most to be feared - the "NASTI" regimes⁵(see note 3)

Our failure to fully close the door on proliferation leads us to foolishly trust flawed concepts of deterrence, invites others to deter us, and eventually brings us face to face with the ugly issues of retaliation and response in a dirty war which kills far too many people.⁶

DoD maintains that production of chemical and biological weapons requires no greater technical expertise than does the production of drugs or fertilizer. In fact, dual use technology makes proof of WMD manufacture extremely difficult. Stopping the proliferation of WMD is indeed a difficult problem, particularly with the accessibility of information on the Internet today.

Sometimes called the poor man's nuclear weapon, biological agents are a relatively cheap force multiplier. They provide a capability as lethal and potentially devastating as nuclear weapons - (100kg of anthrax delivered by an efficient aerosol generator on a large urban target would be between two and six times as lethal as a one-megaton thermonuclear bomb).⁷

The US is increasing detection capability and procuring equipment (see note 4) to counter agents when detected (such as suits, masks, and decontamination equipment)⁸. Yet, we now face the potential that many of these agents could potentially be microencapsulated. (see note 5)

Increased absorption rates and permeation capabilities may well destroy the benefits of current carbon filters and chemical suits. The consequences of facing a large target set (see note 6), WMD production capacity improvements⁹, or potentially more lethal agents are magnified when considering that agents may become more persistent than dust, more difficult to detect, and more readily absorbed. In preparing for the future threat, we must consider that WMD seeking countries may have taken these lessons from the Gulf War:

- Iraq missed opportunities by allowing the U.S. to deploy and build up forces, *unimpeded*.
- Iraq chose unwisely to face U.S. forces in a *symmetrical war* (conventionally).
- The threat of WMD could have used, *more effectively*, to intimidate U.S. regional allies.
- America was vulnerable, due to *aversion to casualties*, to manipulation via the WMD threat.

In preparing for this threat, will we continue to *rely on retaliation*, hoping to *deter* WMD attack?

Will we *deploy costly assets* (such as Theater Ballistic Missile Defense and aircraft to hunt SCUDs) to *defend* against WMD attack? Will we *protect* our forces by inoculating our forces against as many potential "bugs" and making preparation and procuring the necessary equipment for decontamination of the environment? Or, better yet, will we *preemptively strike* to remove the threat; in order to *limit the potential risks* should deterrence fail?

The Gap Between Our Non-Proliferation and Counter-Proliferation Efforts.

Current *policy* addresses the WMD threat, in our National Security Strategy (NSS), as "the greatest potential threat to global stability and security."¹⁰ However, current U.S. *efforts* to deter WMD proliferation lean more toward *non-proliferation* (NP) and deterrence (via threat of retaliation) than from true *counter-proliferation* (CP) *efforts*.

The DoD Counterproliferation Initiative involves a range of Department-wide activities that help to *prevent, protect against, and even reverse* the danger from spreading nuclear, biological, and chemical weapons; technology; and missiles that can deliver them. These efforts include developing systems that can intercept or destroy these weapons, providing vaccines and protective suits for our troops, keeping track of the movement of weapons

and technology, and providing unique DoD support for various *nonproliferation* agreements. [emphasis added]¹¹

Non-proliferation (NP) efforts have borne many successes (through diplomatic efforts) to *deter* the spread of WMD.¹² These successes, represented by the number of signatories on the Non-Proliferation Treaty (NPT), the Chemical Weapons Convention (CWC), and the Biological Weapons Convention (BWC), do signify gains in NP. However, as Col. Rehbein says, "for all the unexpected success of our *nonproliferation* activities, the fact remains that even a single individual "bad actor" can inflict enormous suffering and damage upon us and our allies." [emphasis added]¹³

A *determined* nation, seeking WMD, may not be dissuaded by our NP efforts. The mere difficulty in acquiring nuclear weapons *may* keep the number of nuclear proliferators small. However, the relative ease of acquiring chemical or biological weapons capability, (and the impact such a capability brings, in terror or recognition of *that* power), makes WMD *extremely lucrative* to nations (or non-state actors) that desire *such power at low cost*. UN experts estimate, "the cost of producing mass casualties per square kilometer are: \$1 for biological, \$600 for chemical, \$800 for nuclear, and over \$2000 for conventional."¹⁴

In "Tomorrow's War Today's Decisions," Robert Chandler speaks of the possible effect WMD can have on shaping the future battlefield. He states,

Potential U.S. regional adversaries seek a WMD not only to intimidate and/or defeat their neighbors, but to deter and, if necessary, disrupt and block outside intervention. Most if not all, such states view the United States as their principal extra-regional threat, and WMD *as the means* for devaluing U.S. military might by exploiting America's aversion to casualties and its clear dependence upon access to ports, airfields and military facilities in a theater of conflict. [emphasis added]¹⁵

Current Versus Needed Capabilities

Success in deterrence requires credibility of threat. Is WMD a credible threat that will *deter* our *deployment*? Deployment into and operations within areas threatened by WMD will require sufficient protective capability. (see note 4) Will our *threat* of retaliation deter the *adversary's* *employment*? With such risks, why would we treat WMD different from any other weapon? Knowing the potential cost WMD could bring, should an operational commander allow the enemy an ability to bring WMD to bear, (any more than allowing tanks, troops, or guns to bear), *while threatening response*? And, because it is a *strategic weapon*, (as we countered in the Cold War), should not our plans include countering this threat preemptively?

After Desert Storm, the US Air Force judged that Iraq did not use chemical or biological weapons against Coalition troops, because they feared the coalition ability to retaliate with non-conventional weapons.¹⁶ This perceived threat of overwhelming coalition retaliation worked. However, a question for the future is - *will deterrence remain credible* against future adversaries, and will U.S. preparations, of "deter, detect, and protect," be enough, *in the event deterrence fails*?¹⁷

The NSS states, "the threat of WMD is receiving the special attention that it deserves;" and that, "such preparedness requires the capability to deter, defend, protect and respond to the use of WMD when necessary."¹⁸ This statement is illustrative of the *defensive direction* and *emphasis* that our counterproliferation efforts follow.

Additionally, there is *no* current joint or service doctrine established on *how* to conduct counter-force operations against WMD facilities. DoD documents and efforts appear to concentrate on the belief that counter force capabilities are *inherent*, in our *normal military*

traditional missions. However, the potential *consequences inherent* in striking WMD facilities requires unique capabilities designed to mitigate the devastating collateral effects possible with release of agents in such strikes.

Current U.S. CP initiatives are too defensive. Our NSS speaks of how deeply our nation relies on NP and arms control efforts, (and the belief that such efforts will deter nations from seeking WMD). What is more realistic, in today's threat environment, is that chemical and biological weapons *are* the low cost weapons. This threat is one that we, as a technologically superior conventional force, *will face* in the future. As Col. Rehbein wrote,

The nation's reluctance to employ military force to roll back proliferation is symptomatic of mistakenly weighing perceived *high domestic and international political cost* against the actual benefits of conducting such an attack. It should be argued that the real political costs (as opposed to perceived political cost) are actually less for appropriate early military intervention. It certainly costs a lot less domestic political capital for the nation's leadership to explain why we may have struck early against a proliferator than, at a later date, having to explain to a grieving American Public why we didn't do something about certain NBC weapons years ago, when we first knew that *non-proliferation* efforts were not succeeding. [emphasis added] ¹⁹

Efforts to Increase Our Counter-Proliferation capabilities.

SECDEF reports three joint documents guidance (see note 7) have evolved from the broad NSS guidance.²⁰ Such directive guidance initiated the CP Advanced Concept Technology Development (CP ACTD). This ACTD, undertaken by DoD with HQ USEUCOM as the operational sponsor, was begun to improve counter-proliferation (especially our counter-force) capabilities, by examining those technologies that were emerging and sufficiently mature. (see note 8) Requirements generated by such initiatives were referred to by SECDEF when he stated,

The combat air forces have issued a standing mission need statement, in response to *urgent warfighting CINC requirements*, to detect, characterize, and defeat NBC facilities with minimal collateral effects. U.S. forces must be able to interdict an adversary's biological and chemical capability during each stage of the agent's employment.

Counterforce operations include (but are not limited to) attacking agent production facilities, storage complexes, and deployed mobile weapon platforms. [emphasis added] ²¹

Counter force capabilities *are* being developed. *However*, the regional CINCs *are approaching their tasking independently* (with small, dedicated cells responsible for targeting, generation of requirements for CP efforts, and with producing their tasked plans). They *are* working with appropriate agencies to determine the required needs to fulfill their current shortfalls. *However*, as the GAO study found (see note 9), insufficient effort has been applied to these shortfalls. In arguing the critical nature of *one such shortfall*, (a long-range standoff weapon), Robert Chandler, in "Tomorrow's War-Today's Decisions, asserts that our (Air Force) requirement for foreign bases, (vulnerable to WMD attack), will hamper operations.

Deterrence can never be guaranteed; theater missile defenses have gaping holes in them as a result of budgetary restructuring to cover "other Department priorities," and passive defense programs are under-funded. This leaves counter-force operations, but they will remain *militarily infeasible* so long as *theater-based aircraft are left to carry the precision strike burden*. [emphasis added] ²²

Such a lack of combined effort, in coordinating CINC's counter WMD requirements, will leave the Chairman (via the JROC/JWCA) to establish *any* priority. This *lack of unity of effort*, undermines the ability to *quickly* develop (or field) systems, or *to cooperatively push* the uniformed *services to fund such requirements* towards appropriation and allocation.

Needed Changes to Our *Planning* Capabilities.

As part of the CP ACTD, the Defense Threat Reduction Agency (DTRA) is developing computer planning and analysis tools capable of predicting weapons effects on facilities, the potential for release of agents from struck facilities, and the potential behavior or effects of such releases (see note 11). With such tools, planning can be conducted to determine the required depth of weapon

detonation that *will preclude aerosol of agent*. Weapons can therefore be *programmed* to destroy the *functionality* of the facility *without causing collateral effects*. These tools can provide (plume) predictions on the density and lethality of particular agents and their track based on predicted or actual local weather and winds. Analysis utilizing historical or pattern weather data can provide long range planning estimates of weapon choices upon specific facilities. ²³

Needed Changes to Our *Intelligence* Capabilities.

Greater collection effort is required against WMD facilities in order to increase more about what we did not previously know. For instance, the UNSCOM reports from Iraq show the discovered WMD capabilities vastly outpaced the intelligence US agencies predicted for Iraq's stage of development. Planning tools for preemptive strikes will require intelligence support, far greater than we currently have. The impact of such ISR shortfalls are highlighted by the recent Chinese Embassy bombing incident in Kosovo, during NATO strikes. Without *exercising* and thereby *identifying and refining our critical intelligence shortfalls*, well ahead of time, Joint Force Commander (and their JFACCs) will be hampered into indecision, due to insufficient information (see note 12). One solution to alleviate this shortfall is to task our CINCs theater Joint Intelligence Cells (JICs) to produce WMD Target System Analysis (see note 13), on threat country capabilities. This long-range look will increase the intelligence capabilities and focus our efforts.

Needed Changes to Our Weapons Capabilities.

Improved munitions and standoff weapons, capable of penetrating and safely destroying the habitability of such facilities without creating catastrophic collateral effects, are required. (see note 14) Such weapons can *deny* the adversary his production, storage, or weaponization

facilities by making them uninhabitable (and better off just buried). (see note 15) Without these weapons, the potential for such catastrophic results *may be self-limiting* on the US ability to hold such targets at risk.

Required Changes to Exercises, Training and Doctrine.

CP exercises would demonstrate the preemptive capability effectiveness and also build the necessary confidence in our ability to execute such options. This demonstrated capability and confidence (turned resolve) would provide a far greater deterrent than our current threat of retaliation. Test and evaluation through exercises (of these capabilities) will diminish the fear of collateral effects and increase our flexibility to *deny* the adversary his WMD capability.

Experimentation being conducted in conjunction with developing these capabilities is providing valuable refinement of these capabilities (see note 16). Military exercises, (such as the latest Fleet Battle Experiment-E), are investigating these innovative approaches as well as testing our current shortfalls. Such exercises will lead to the development of the requisite TTP and doctrine and provide *synergy* with the agencies we will need to work with

The Necessary Change to Our Mindset.

In addition to tools and experience, we also need *resolve* to carry out preemptive options against rouge nations WMD facilities, delivery capabilities, and storage sites. *Confidence* in our ability *to execute* such options, with low risk and to limit collateral damage or collateral effects is *critical* to developing that national resolve. The belief that *we will execute*, with the capability to remove or deny our adversary his WMD, is in itself a stronger deterrent than threatening retaliation. Only this will provide a *true deterrent capability* in support of US CP efforts. Efforts

to date to *incorporate this preemptive mind-set* into our military options is hindered by those who believe that such preemptive measures are politically *un-acceptable*.

Politically, our leaders should argue that the Law of Armed Conflict (LOAC) *justifies* proactive and preemptive actions against the WMD threat (see note 17). Such a case would lead the way to developing the necessary resolve and begin to foster international understanding of the necessity to preemptively remove the WMD threat.

Or, Are Current Capabilities Sufficient?

The US was fortunate that deterrence was not tested in Desert Storm. We were also fortunate, that our ability to deploy and operate within a contaminated environment, was not tested in Saudi Arabia. Greg Weaver and J. David Claes provide a look at the potential devastation that threatened the coalition build up during Desert Shield/Storm. These authors describe plausible scenarios (based on Iraqi WMD capabilities) in their work - "Inviting Disaster."²⁴ The risks they illuminate in their research are staggering, considering how our forces insert into every theater of operations. This seminal work of Weaver and Claes drives home the sobering cost WMD attacks, against the major Air (or) Sea Ports of Debarkation (APOD/SPOD) could have brought. To really consider the real WMD lessons learned from Desert Storm, we should consider the words of General Chuck Horner, the Commander of the Coalition Air Campaign against Iraq:

The Proliferation of WMD and ballistic missiles means that our current strategy, of pouring thousands of fighters and hundreds of thousands of troops into our enemy's back yard *is not longer viable*. [emphasis added]²⁵

What If We Don't Change? - The Price of Doing Business, *the old way*.

We see from DoD statements made during the Gulf War, there was a belief that *timing and weapon choice* could minimize the chance for collateral effects.

Coalition targeting policy and air crews *made every effort to minimize* civilian casualties and collateral damage. Because of these restrictive policies, only PGMs (Precision Guided Munitions) were used to destroy key targets in downtown Baghdad in order to avoid damaging adjacent civilian buildings. *Planners were aware that each bomb carried a potential moral and political impact*, and that Iraq has a rich cultural and religious heritage dating back several thousand years. Targeting policies, therefore, scrupulously avoided damage to mosques, religious shrines, and archaeological sites, as well as to civilian facilities and the civilian population. During December, a team was formed in the continental United States (CONUS) *to determine the most effective way to attack Iraq's arsenal of CW/BW weapons*. Several experiments were conducted which *attempted to find a way to destroy these weapons without releasing BW agents or causing significant collateral damage*. Finally, through the *timing* of attacks and *choice* of munitions, planners were able to *minimize* the chance for toxins to spread. No chemical or biological agents were detected after the attacks and no CW/BW collateral damage was experienced. [emphasis added] ²⁶

Recent allegations of CW weapons *fallout* (from destruction of production and storage facilities) during Desert Storm are evidenced in the statements of James J. Tuite III, (from the Interdisciplinary Sciences Director at the Chronic Illness Research Foundation) to the annual press conference of the Chemical Weapons Working Group:

On June 21, 1996, the Department of Defense admitted that chemical weapons were deployed in the Kuwaiti Theater of Operations and that they were improperly destroyed by US troops after the war. But, even with this admission, they continue to insist that only a small number of troops may have been exposed. We know the troops were exposed to these nerve and blister warfare agents as well as many other toxic compounds that by themselves or in combination have been shown to result in chronic illnesses and cancers. ²⁷

Newsday's Patrick Sloyan states that this report brings into question the *Pentagon's version* of the postwar destruction of Iraqi chemical-weapon storage sites. As he states,

Such evidence validates previous allegations of some veterans groups who argued that exposure to nerve agents was contributing to the mystery illness called the Persian Gulf syndrome. Until now, the CIA projections showed lethal clouds of chemical agents blowing north - away from allied troops - and falling to the ground in remote areas of Iraq after traveling less than 40 miles ²⁸

And, we now know, (from their briefing to the Presidential Advisory Committee - on Gulf War Veteran Illnesses, July 9 1998), that CIA findings show that US troops may have been exposed to low-levels of nerve gas during US air attacks on Iraqi chemical-weapon plants (see note 18). Such collateral effects illustrate how *critical* it is to have a capability to preclude such effects. Mitigation of these risks requires *much more* than *timing* and *choice* of weapons.

Some would argue that our inability to guarantee the location of all an adversary's weapons, would preclude this preemptive option. Others may argue that having a declared policy of preemptively striking would drive an adversary to use WMD (upon indications that *we may* strike). But these arguments cannot be answered by this capability. Perfect *intelligence* and superior knowledge, of what the adversary *will* do, is beyond the capability of any physical military capacity. However, the value of preemptive capability is realized when one considers the caveat – “If deterrence fails.” Such an argument can only be decided by weighing the merits of utilizing a capability to preemptively reduce the potential risks/costs (of meeting the WMD threat - should deterrence fail). Or, *comparing* the risks versus costs of *not* having the capacity to preemptively strike, and facing the entire arsenal of WMD threat, should deterrence fail. Our decision-makers must decide whether it is wiser to accept the risks (and potential costs) of not attempting to reduce the threat, in the event deterrence fails.

Development of preemptive capabilities does not have to lead to a declared policy. Nonetheless, declaring such a *policy* and demonstrating such a *capability* may prove *invaluable* by developing an Intelligence Operation (IO) campaign to promote deception and vagueness about our true intent or capability. We can intentionally leave our potential WMD adversaries

guessing as to true US intent or capabilities. Which may well be a far greater deterrent, than promoting deter, protect, and defend. After all, if our adversary has to expend effort, time, and money to counter *potential* US capability, (to interdict his WMD), won't this drive up his WMD cost? It will no doubt increase his time to employ, make him more responsive to us, and make him more vulnerable to our IO message. All these efforts further our efforts to stem his threat.

Conclusion.

We must build the effective tools to be able to preempt this potential threat, or face the consequences. As Pericles said, (when speaking to the Athenians about the Spartan ultimatum of 432 BC), "*What I fear is not the enemy's strategy, but our own mistakes*".²⁹

Without a preemptive capability, the US will be *held at risk*, vice having the capability to *hold these facilities at risk*. Our actions may well become limited by the threats of our adversary. *Strategically*, the capability and resolve must be available to preempt an *adversary's threat* of WMD. *Operationally*, the CINC must have the capacity to plan for *mitigation of this threat* and authority (confidence and approval) to utilize those capabilities to remove this threat. *Tactically*, the commander must have the tools to preclude the hazardous effects, his actions may have in removing the threat of WMD. *Specifically, we need the capability to reduce the risks associated with this threat*. Without the ability to deny the production or storage of the weapons, we will merely be trying to cover the enemy's potential WMD *deployment, employment, and staging* points in order *to interdict* actual utilization against us. As Col. Rehbein puts it,

If in our counterproliferation efforts we mainly focus on responding to their use or fighting in a contaminated environment against an enemy armed with these weapons, *then we've already ceded the counterproliferation fight*. We're no longer fighting against, opposing, or inhibiting the proliferation of WMD.³⁰ [emphasis added].

Recommendations.

This change requires that we *fundamentally increase the level of effort and emphasis* in solving our CP *planning, munitions, intelligence, doctrine, and willingness (resolve) shortfalls*.

Consider the GAO report from 1996, and remember that not much has changed (in our emphasis, especially in funding):

Chemical and biological defense activities at all levels tend receive a lower level of emphasis than other high-priority activities, such as performing traditional operational mission tasks. This lower emphasis is seen in the funding, staffing, monitoring, and mission priority given to chemical and biological defense activities.³¹

The CJCS should direct CINCs to participate in developing a combined statement of counter-force requirements. This statement should be directed to the CP council in order to match planned and current capabilities with those requirements, in order to determine shortfalls. Once identified, the Chairman *must direct* the services to *reprogram* for the necessary changes to weapons and planning-tools to ameliorate those shortfalls. A deliberate and sober effort requires matching programmed capabilities, with our current shortfalls, and filling the gaps preempting WMD will requires. Only by exercising, and testing these capabilities will be refine the capacity to *execute* with a *measured risk* associated with these difficult targets. These exercises will drive the doctrine development on *how* to deal with such a potential devastating threat.

In order to *lower potential risks* of preparing for future WMD threats, we must add this capability to our CP mission toolbox. *Develop the capabilities, task* the CINCs to *train to it, refine* our TTP and *doctrine*, and *resolve to use it*. Said the most appropriate way, let's *train like we intend to fight*.

ENDNOTES

- ¹ W. Seth Carus, The Poor Man's Atomic Bomb, Policy Papers, no. 23 (Washington, DC: The Washington Institute for Near East Policy, 1991), 43.
- ² Raymond S. Shelton, "No Democracy Can Feel Secure," US Naval Institute Proceedings, Aug 1998, 40.
- ³ Carus, 22.
- ⁴ David J. Rehbein, "Countering the Proliferation of Weapons of Mass Destruction; The Case for Strategic Preemption", (Unpublished Research Paper, US Army War College, Carlisle Barracks, Penn: 01 April 1998).
- ⁵ Barry Schneider, "Strategies for Coping with Enemy WMD," Air Power Journal no. 10 (1996), 36.
- ⁶ Rehbein, 9.
- ⁷ Department of Defense, "Proliferation of Weapons of Mass Destruction", Annual Report to the President and the Congress 1997, (at: http://www.dtic.mil/execsec/adr_intro.html), 09 April 1999.
- ⁸ US General Accounting Office, "Chemical and Biological Defense; Emphasis Remains Insufficient to Resolve Continuing Problems." (Washington DC: US Government Printing Office), 1996.
- ⁹ Defense Special Weapon Agency, High Temperature Incendiary Technologies to Counter Facilities for Biological and Chemical Weapons of Mass Destruction, (Washington DC: LOGICON/RDA) 01 August 1998, 7.
- ¹⁰ William J. Clinton, A National Security Strategy For A New Century, (The White House: October 1998), 6.
- ¹¹ William J. Perry, "Proliferation-Threat and Response", (at: <http://www.defenselink.mil/pubs/prolif/preface.html>), Preface.
- ¹² Charles H Bay, "The Other Gas Crisis: Chemical Weapons", (Unpublished Research Paper, US Army War College, Carlisle Barracks, Pennsylvania, 1 August 1979), 14.
- ¹³ Rehbein, p. 4.
- ¹⁴ Richard Danzig, "Biological Warfare; A Nation at Risk—A Time to Act," Institute for National Strategic Studies, (January 1996): p. 1.
- ¹⁵ Robert W. Chandler, Tomorrow's War, Today's Decisions -Iraqi Weapons of Mass Destruction and the Implications of WMD-Armed Adversaries for Future U.S. Military Strategy, (McLean, VA: AMCODA Press 1996), 156-163.
- ¹⁶ US Department of the Air Force, Gulf War Air Power Survey; Summary Report, (Washington DC: US Government Printing Office 1992), 81.
- ¹⁷ Clinton, 23.
- ¹⁸ Ibid, 22.
- ¹⁹ Rehbein, 19.

²⁰ Department of Defense, "Nuclear/Biological/Chemical (NBC) Defense" Annual Report to Congress, (at: <http://www.acq.osd.mil/cp/cprc96/ch4.htm>), 09 April 1999.

²¹ William J. Perry, "Proliferation: Threat And Response," Office of the Secretary of Defense, April 1996, (at: <http://www.defenselink.mil/pubs/prolif/response.html>), 09 April 1999.

²² Chandler, 156.

²³ Defense Special Weapon Agency, High Temperature Incendiary Technologies to Counter Facilities for Biological and Chemical Weapons of Mass Destruction, (Washington DC: LOGICON/RDA) 01 August 1998, 1.

²⁴ Greg Weaver and J. David Claes, Inviting Disaster — Weapons of Mass Destruction Undermine Strategy For Projecting Military Power, (Boston: Houghton and Milflin, 1996), 13.

²⁵ General Horner, quoted in Weaver and Claes, 36.

²⁶ Department of Defense, "Conduct of the Persian Gulf War; Final Report to Congress, April 1992, (at: <http://www.defenselink.mil/pubs/prolif/response.html>), 09 April 1999, 99-100 and 154-155.

²⁷ James J. Tuite III, "Statement" at the Annual Press Conference of the Chemical Weapons Working Group, Washington, DC, April 21, 1997, at: <http://www.cwwg.org/Tuite.html> > (09 April 1998).

²⁸ Patrick J. Sloan, "Nerve gas blew toward troops", The Seattle Times, Aug 7, 1996, at: <http://archives.seattletimes.com/cgi-bin/texis.mummy/web/vortex/display?storyID+36d4bb5747&query=patrick+sloan> >.

²⁹ Thucydides, (Robert B. Strassler -Ed), The Landmark Thucydides : A Comprehensive Guide to the Peloponnesian War, (Chicago, IL: Free Press 1996).

³⁰ Rehbein, 3.

³¹ US General Accounting Office, Chemical and Biological Defense: Emphasis Remains Insufficient to Resolve Continuing Problems, (Washington, D.C: US Government Printing Office), April 1996, 3.

Explanatory Notes – Appendix A

1. Under the Biological Weapons Convention (BWC), the U.S. (though not required to) gave notice of destruction of all U.S. stocks of CW weapons and toxins, with the exception of laboratory quantities of such agents to support defensive research programs.¹
2. In a published paper from the Army War College, "Countering the Proliferation of Weapons of Mass Destruction—The Case for Strategic Preemption," Col. David J. Rehbein, USA, *argues for a preemptive intervention of NASTI's WMD capabilities.*
3. The term "NASTI" was coined by Barry Schneider and is used to describe proliferation-seeking actors. Schneider describes such actors as: **NBC-Arming Sponsor of Terrorism and Intervention and states**, "Common to NASTIs are their demonstrated desires to conquer or dominate the governments of neighbors, participation in sponsoring terrorist activities, and just plain "nasty" policies of threats and acts of violence against regional and domestic opponents."²
4. DoD regulation 5000.2-R requires all mission essential systems to be survivable to those threat levels anticipated in their operating environment. The intent of this requirement is to ensure that the use of NBC weapons on a future battlefield will not disarm U.S. forces. All force modernization efforts should continue to incorporate NBC survivability in equipment designs. Failure to field NBC survivable equipment would significantly impact the ability to fight and win future conflicts.
5. Microcapsules (or microencapsulation) provide a variety of functions designed to make *agents* more easily handled, function more efficiently, or remain more viable for longer periods of time (resistant to environmental factors). According to the RT Dodge Company, a microencapsulation production company: "Microencapsulation began as an experiment at NCR Corporation in 1954 (with carbonless paper and developed into "scratch and sniff" products. It is a process, which can vastly *increase the viability* of chemical and biological agents and *make them more resistant* to environmental factors. Research continues and has resulted in a number of different processes for the encapsulation of micro-particles or micro-droplets. Early processes were comprised of four basic steps: (1) The particles or droplets were dispersed or suspended in an aqueous gelatin solution; (2) the gelatin is "phased out" of solution to form what is commonly called a "coacervate; (3) under further controlled treatment of the dispersion, the gelatin coacervate is deposited onto the particles or droplets; and (4) lastly, the capsule dispersion is treated so as to *toughen or harden the gelatin capsule wall.*"³
6. According to CIA reporting: "prior to Desert Storm Iraq possessed: 800+ - SCUD (multiple variants) missiles; 140+ - Aircraft (TU-16s; TU-22s; MiG-29s; F-1s; MiG-23s; and SU-24s); 355 - Tons-Mustard and Sarin Agent (blister CW Agents); 10 liters - Ricin (toxin); 490 tons - VX Precursors material; 3,173 tons - Other CW precursors; 10,000+ - munitions; 20,000+ - 120mm mortar shells with CS capability; 12,694 - 155mm artillery shells with CS capability; 30+ - SCUD CW capable warheads; 2,500 liters - Aflatoxin (including 16 SCUD warheads); 8,300 liters - Anthrax (including 10 SCUD warheads); 19,000+ liters - Botulinum toxin (including 15+ SCUD warheads)."⁴
7. These documents are the *Missions and Functions Study*, the *CP Charter*, and the CJCS's *CP 0400 CONPLAN* (concept plan). These key documents form the core of the CINCs' formal CP tasking for the execution of U.S. CP policy.

¹W. Seth Carus, The Poor Man's Atomic Bomb, Policy Papers, no. 23 (Washington, DC: The Washington Institute for Near East Policy, 1991), 2.

²Barry Schneider, "Strategies for Coping with Enemy WMD," (Air Power Journal no. 10, Special Edition 1996), 36.

³R.T. Dodge Co, "History of Microencapsulation", found at: <http://www.rtdodge.com/page3.html> >(23 April 1999).

⁴Department of Defense, The Annual Report to the President and the Congress, at: http://www.dtic.mil/execsec/adr_intro.html >(April 09, 1999), p. 46.

8. HQ USEUCOM, as the operational sponsor for the Counter-proliferation ACTD (CP ACTD), is working together with EUCOM component commanders and the Defense Threat Reduction Agency (DTRA-*formerly DSWA*), to develop, demonstrate and deliver improved counter-force capabilities. CP ACTD priorities include: improved capabilities for characterization and defeat of NBC targets; enhanced capabilities for forecasting and limiting collateral effects that might be associated with such attacks; and assisting the warfighter in the development of operational concepts.⁵
9. In March 1996, the General Accounting Office (GAO) issued its assessment of DoD's readiness to operate in a CB warfare environment. GAO found that DoD had taken steps to improve the readiness of U.S. forces to operate in CB contaminated environments, but that equipment, training, and medical shortcomings persisted and could cause needless casualties and a degradation of U.S. combat capability. DoD maintains that there has been significant progress in addressing the issues identified by DoD and GAO. DoD maintains that significant progress has been made in Counterforce capabilities (against adversary nuclear, biological, and chemical infrastructure). And, DoD is convinced sufficient effort is being conducted by the joint combat air forces, (which they claim – "have issued a standing mission need statement, in response to urgent warfighting CINC requirements, to detect, characterize, and defeat NBC/M facilities with minimal collateral effects."⁶
10. The largest argument for preemption is in reducing the threat. There is vulnerability to exploit in the production processes, as strict environmental controls and stability of the manufacturing and storage processes is required (to produce consistent and stable batches) of Chemical Weapons (CW) or Biological Weapons (BW). Once produced, CW/BW agents must be protected from temperature extremes, light, time, and other environmental factors that can attack and break down agents. All these factors work against a proliferator's ability to maintain the stability and viability of their produced CW/BW weapons. Once produced, agents must be stored or mated to delivery systems, such as ballistic missile warheads. This mating process must occur in specific munitions handling areas or environments (typically designed for explosive safety). These process requirements *produce exploitable vulnerability* in that locations may be determined (in many instances to a few sites) that we can effectively hold at risk (with strike). By holding *production or storage and weaponization* sites at risk we *remove the WMD threat* before we have to rely on deterrence or our capability to operate within a contaminated environment.
11. HQ USEUCOM and DTRA are conducting field experimentation, against model facilities, utilizing traceable gases (released in the attack on the building). The calibrated response of these instrumented mock-up (NBC) facilities, (upon their destruction), provides valuable feedback for refining HPACs computer code. This experimentation validates the computer model's dispersion predictions by verifying concentrations of the released gases, measured over large distances via ground and aircraft detectors. Exercises utilizing WMD scenarios and this software) are being conducted, to allow operators and the developers to better understand the limitations of weapon and facility dynamics, and to best refine software predictions according to active weather phenomena. Fixed winds and weather conditions can be specified, to explore certain effects or to examine options available in certain conditions. The Digital Terrain Elevation Data (DTED) database is used to provide elevation and terrain data. HPAC utilizes this data to plot predictions of agent concentrations in air, over the surface, against time. HPAC can provide estimations of acute and long-term radiological doses, chemical and biological concentrations, and other health effects. A worldwide population database (at a one-kilometer resolution) is being developed for use within HPAC, to provide estimates of population density at risk, during a strike.
12. Intelligence Data Base Production and targeting materials production support is tied to deliberate planning vice crisis requirement. These means that unless CINCs are both aware of this shortfall and inflate their priorities, (on *WMD facilities*), shortfalls will impact their ability to properly plan for execution. Current production priorities are driven to supporting the production for operations plans (OPLANs) and concept plans (CONPLANs)—with target lists. These tasked plans have standing production requirements that tie up target

⁵ Defense Special Weapon Agency, High Temperature Incendiary Technologies to Counter Facilities for Biological and Chemical Weapons of Mass Destruction, Washington DC: LOGICON/RDA, 1998.

⁶ US General Accounting Office, Chemical and Biological Defense: Emphasis Remains Insufficient to Resolve Continuing Problems, (Washington, D.C: US Government Printing Office), April 1996, p.8.

materials production. DIA, as the manager of production for target planning materials, has little *additional flexibility* or capacity to provide crisis support for WMD (in a timely manner). This is not due to a lack of effort, but to a lack of sufficient analyst that can research facilities that haven't been watched or documented due to no previous hard requirements. Current intelligence priorities *preclude* developing populated databases and to develop the requisite imagery to plan for strikes on these facilities.

13. Target System Analysis (TSA) is a new and innovative intelligence approach to *system analysis* that is being explored at HQ USEUCOM's JAC. This process can provide tremendous capability in identifying the vulnerabilities of threat WMD *infrastructure architecture*. Utilizing all source intelligence to identify *key critical nodes* of production and storage facilities, DIA/NIMA/JWAC/JC2WC and CIA are working together to support CINCs Priority Information Request (PIRs) and to answer the key Essential Elements of Information (EEI) on certain WMD proliferating countries. This level of information is required to "peel back the onion" on many these sites where we currently have little priority or information collected and analyzed.
14. For weapons system requirements, EUCOM examined the theater's potential targets, and the weapons requirements (to service those types of targets). In comparing those *requirements* with current or programmed weapon systems, EUCOM/DTRA were able to clearly define the range of weapon improvements that must be made, and which weapon systems must be compatible. The requirement for standoff and compatibility are due to risk, and on-station CINC requirements. This requirement is not currently funded by the Navy, nor the Air Force under their current programming (for long-range standoff) assets. This means for the foreseeable future, the NCA may have to choose a *higher risk option*, of putting a manned aircraft over the target, until standoff weapons are designed to service such hardened or buried WMD threats. EUCOM has convinced the Navy program office to participate in developing a "penetrating" capability with DTRA, (by placing an Advanced Unitary Penetrator (AUP) *warhead* into a TLAM), and the Air Force is researching with DTRA, various methods of incorporating the AUP into a CALCM.
15. WMD facilities are often protected (due to the volatility of their contents) in underground, buried, or hardened facilities. By "modeling," the desired (software depicted) weapons penetration and detonation depth, strike planners can "(by determining the required fuse setting), set the weapons functionality to alter the affect the weapon will have on either destroying the interior critical components without significant release of hazardous agents.
16. EUCOM and DTRA have exercised developed capabilities during the CP ACTD to demonstrate the feasibility of the tools, weapons, sensors, and tactics. Real-world results were exercised by dropping BLU-116 laser guided weapons (AUPs) against facilities, constructed to simulate BW productions sites. The results of the (instrumented) facilities responses, and of the subsequent release of traceable gases, (to simulate agents released during the strike) have provided feedback in developing the tactics, techniques and procedures (TTP) and in refining planning capabilities.
17. The LOAC, as international law, defines normalized conduct of armed hostilities and as such imposes restrictions on the types of weapons that may be employed (and the targets against which weapons may be applied). Two principle foundations of the LOAC are military necessity and proportionality. *Military necessity* requires combat forces to engage in only those acts *necessary to accomplish a military objective*. *Proportionality* serves to ensure military actions preclude *unnecessary suffering* to the civilian population. Therefore, combat forces *must attempt to minimize collateral damage*. Development of the necessary tools, to execute preemptive strikes, precluding collateral damage or collateral effects is justified under *necessity* and *proportionality* in mitigating the risks of a WMD threat.
18. *CLA reports*, "These strikes sent clouds of a low-level nerve agent blowing toward allied positions in Saudi Arabia. Air attacks on Muhammadiyat, west of Baghdad, blew up an estimated 2.9 metric tons (6,400 pounds) of the nerve gas sarin that had been pumped into aerial bombs for the Iraqi air force."⁷

⁷Patrick J. Sloyan, "Nerve gas blew toward troops", *The Seattle Times*, Aug 7, 1996, at: <http://archives.seattletimes.com/cgi-bin/texis.mummy/web/vortex/display?storyID+36d4bb5747&query=patrick+sloyan>

19. CIA reports: "In most cases, the Iraqis did not store CW munitions in bunkers that they believed the Coalition would target. The Iraqis stored many *CW munitions in the open*, protecting them from Coalition detection and bombing because we did not target open areas. In addition, all known CW and precursor production lines were either inactive or had been dismantled by the start of the air campaign." Additionally, CIA reports: "available intelligence reporting and Iraqi statements indicate that Iraq went to great lengths to protect its *biological* munitions from aerial bombardment. Iraqis have stated that biological-agent-filled aerial bombs were deployed to three airfields (well north of the KTO). *Bombs were placed in open pits away from coalition targets, covered with canvas, and buried with dirt.* Iraqi biological warheads for Al Husayn missiles were hidden well north of the KTO both in a railroad tunnel and in earth-covered pits at a location near the Tigris canal. [emphasis added]."⁸
20. WMD, as a target set, demands unique capabilities in high temperature or penetrating weapons, sensors (to provide for early warning and detection), and in the requisite planning tools. These requirements *must be re-programmed* into the service's funding requirements, as additional dollars are not available to allow for unique assets that have limited capability for finite target sets.

⁸ Ibid.

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